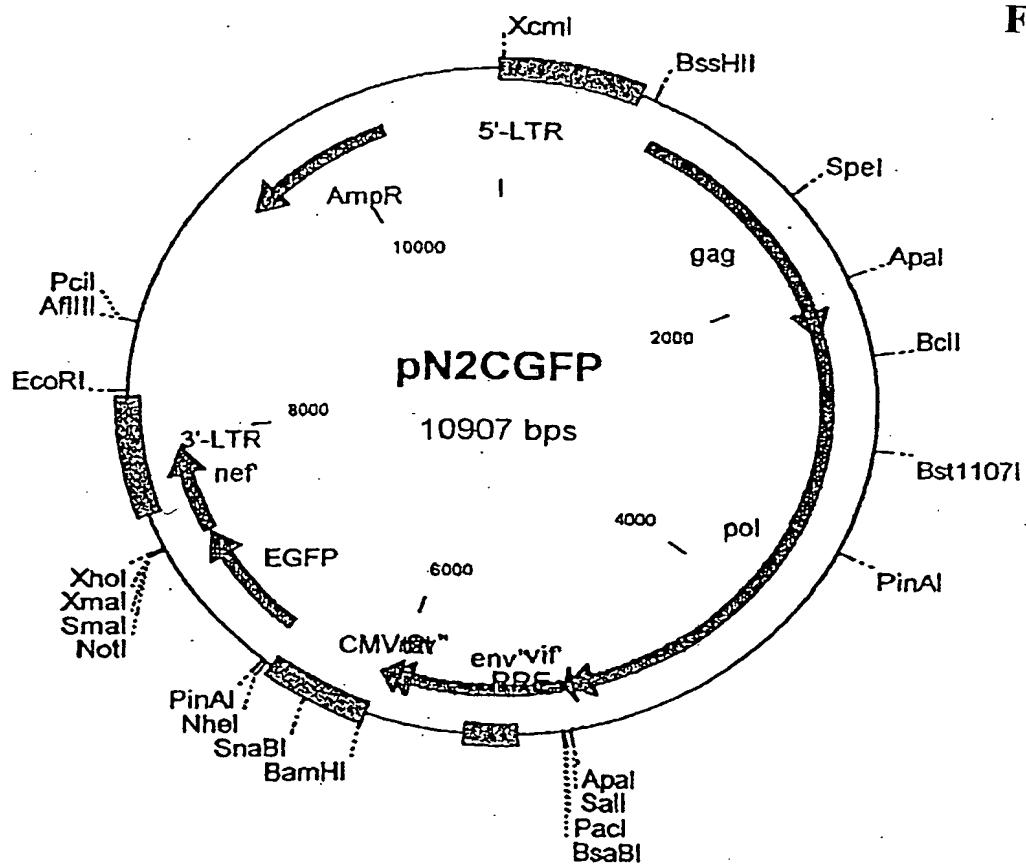


Figure 1

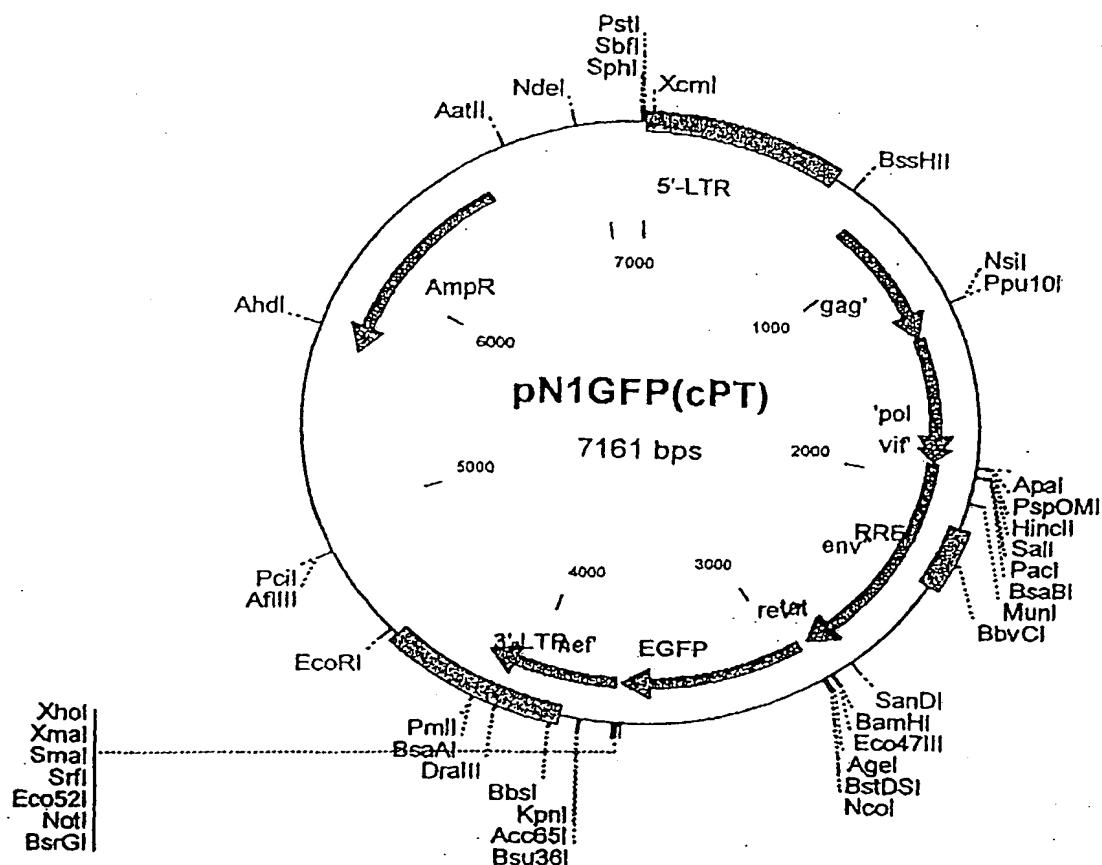
BEST AVAILABLE COPY

Figure 2A



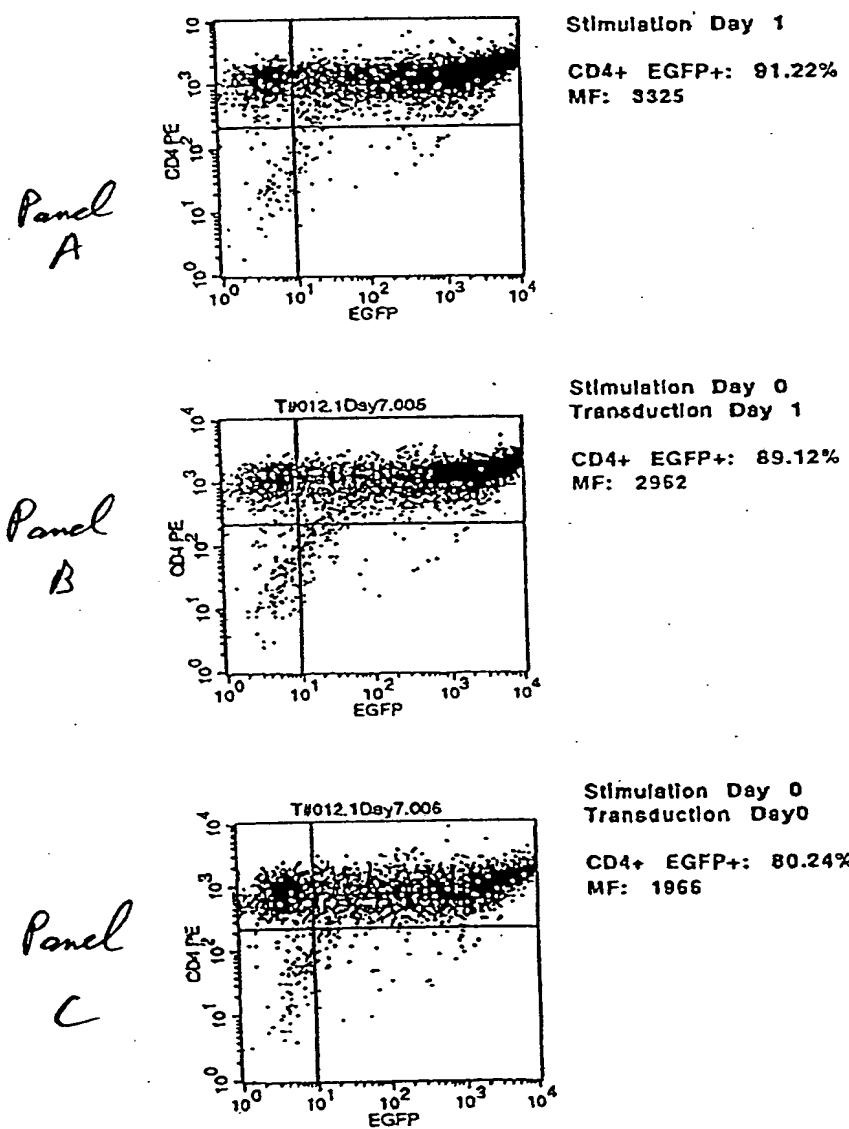
BEST AVAILABLE COPY

Figure 2B



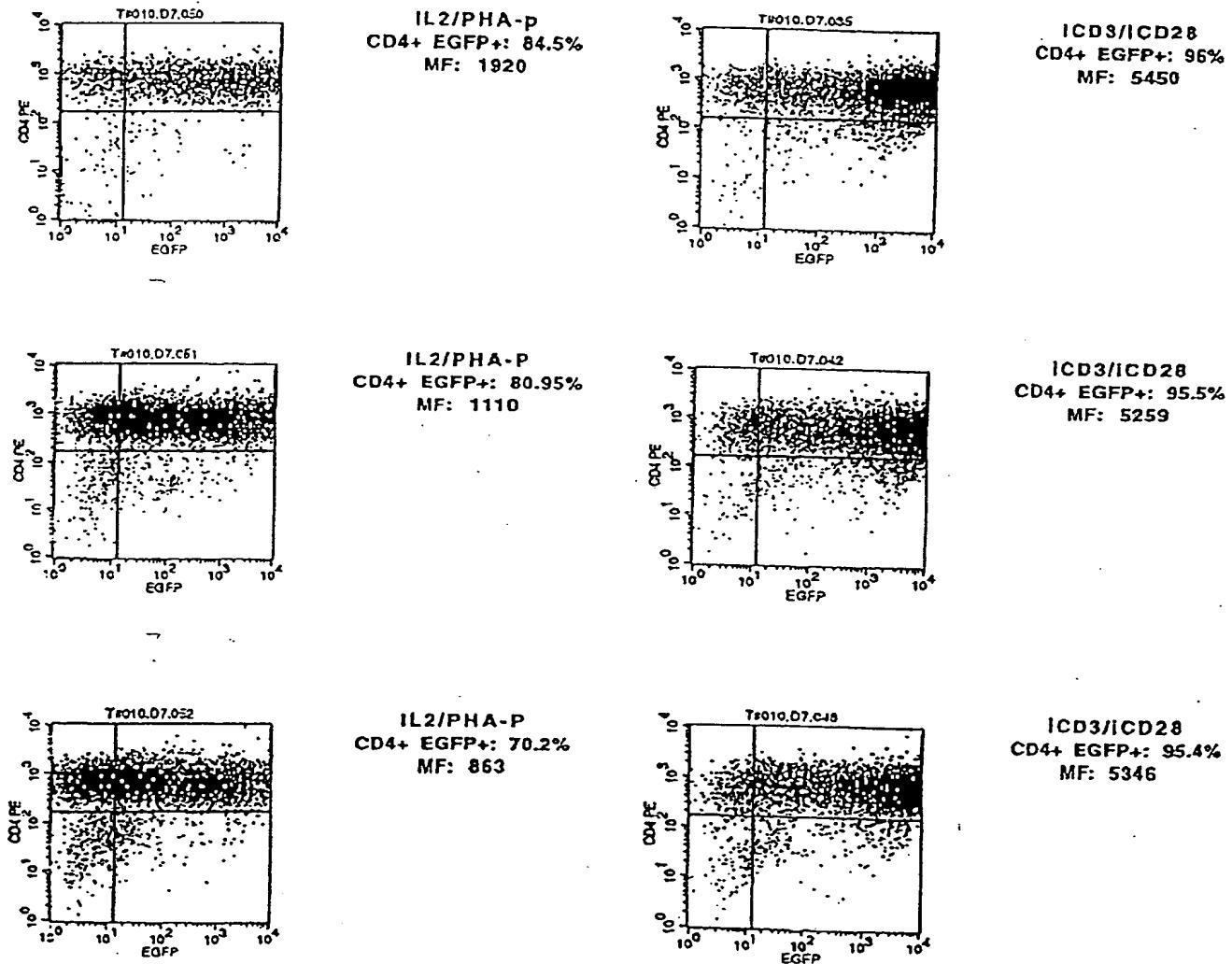
BEST AVAILABLE COPY

Figure 3

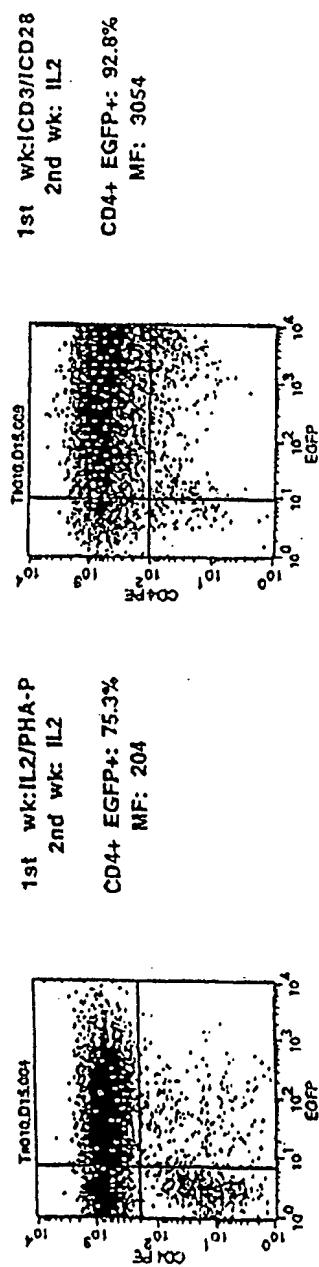


BEST AVAILABLE COPY

Figure 4



BEST AVAILABLE COPY



BEST AVAILABLE COPY

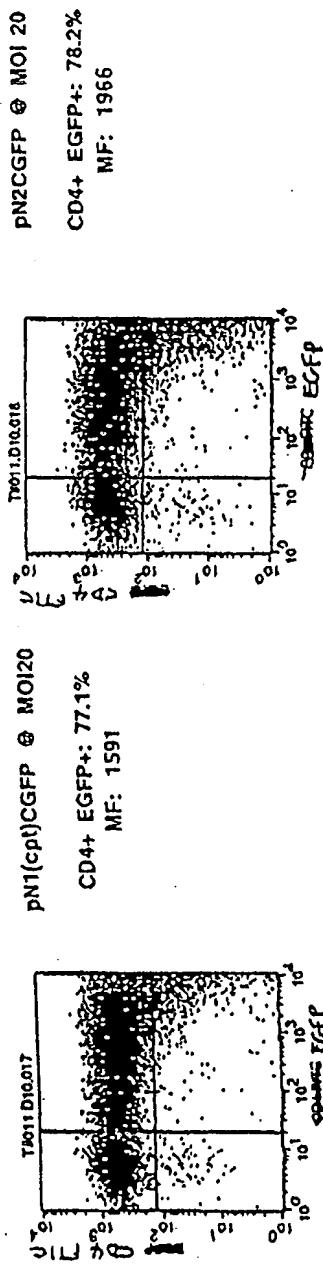


Figure 6

BEST AVAILABLE COPY

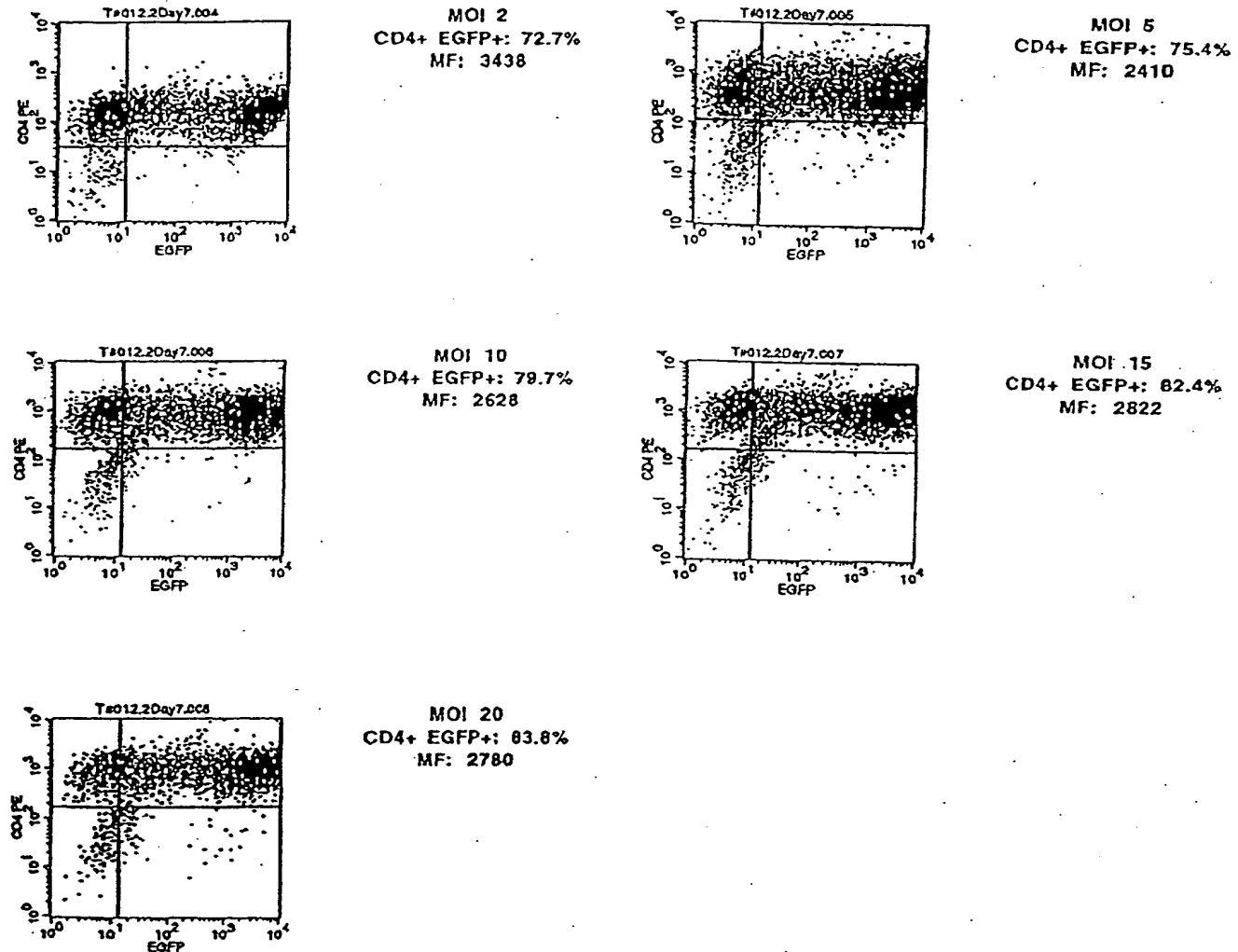
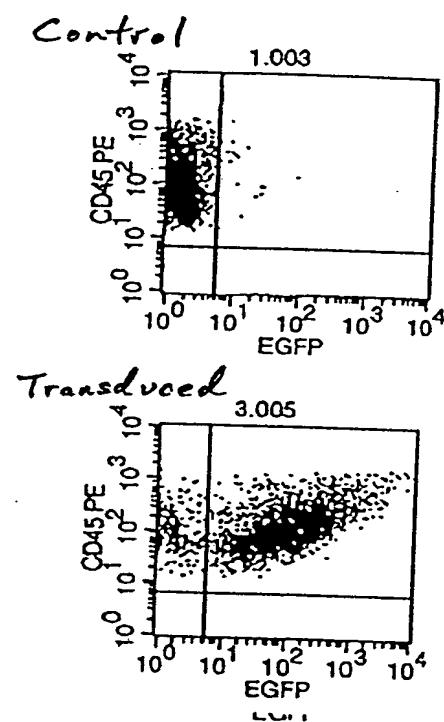


Figure 7

BEST AVAILABLE COPY

Figure 8



BEST AVAILABLE COPY

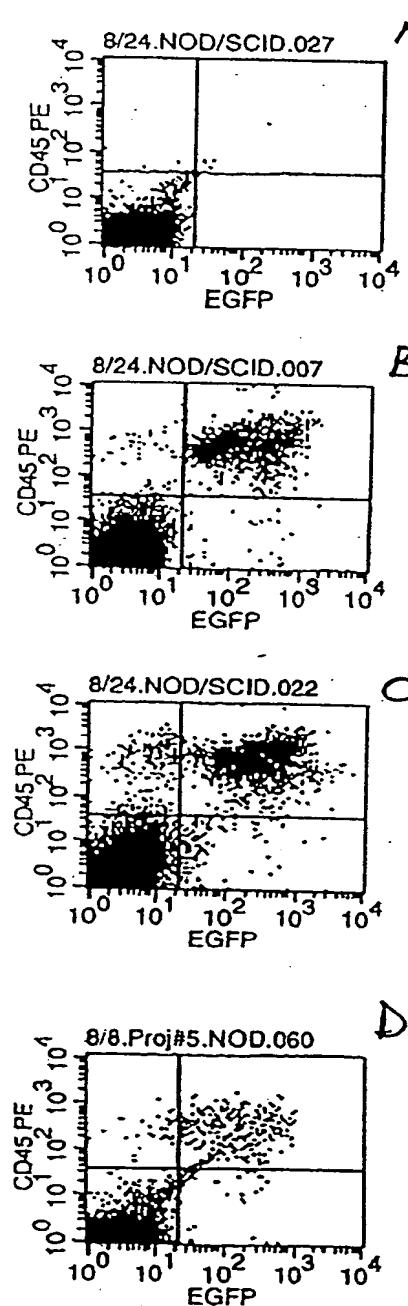


Figure 9

REST AVAILABLE COPY

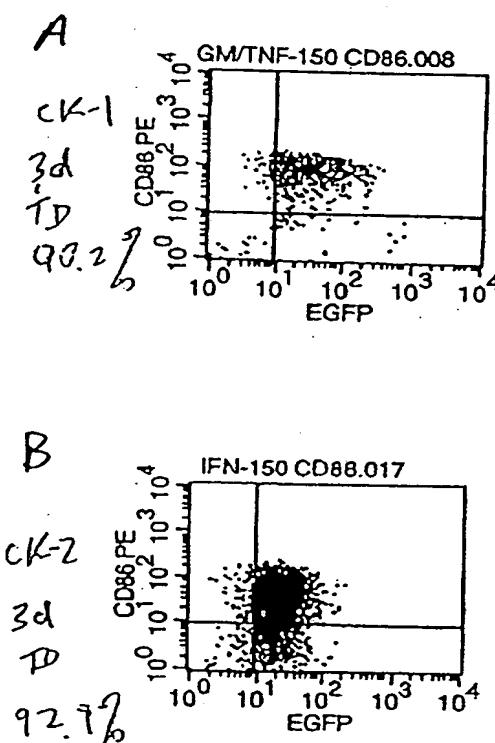


Figure 10

BEST AVAILABLE COPY

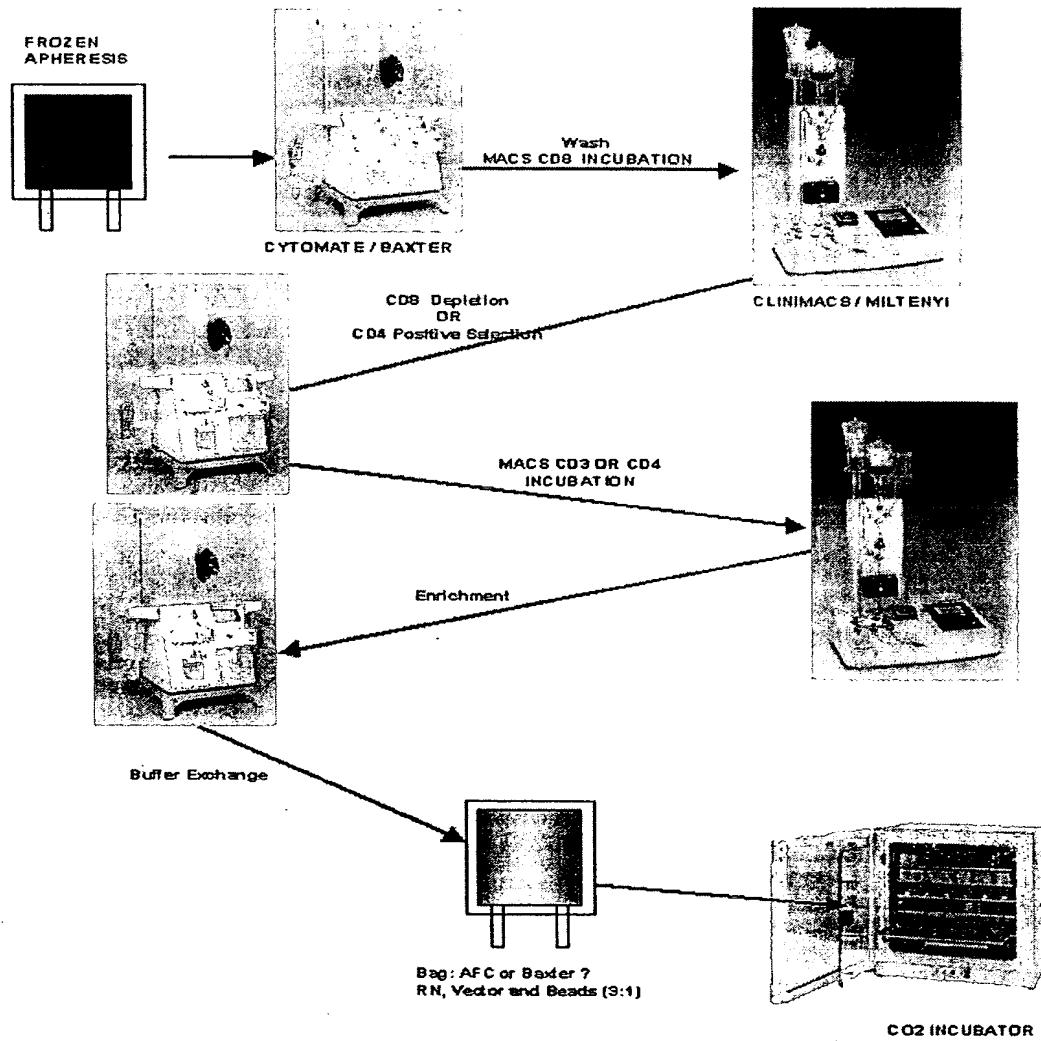


Figure 11

BEST AVAILABLE COPY

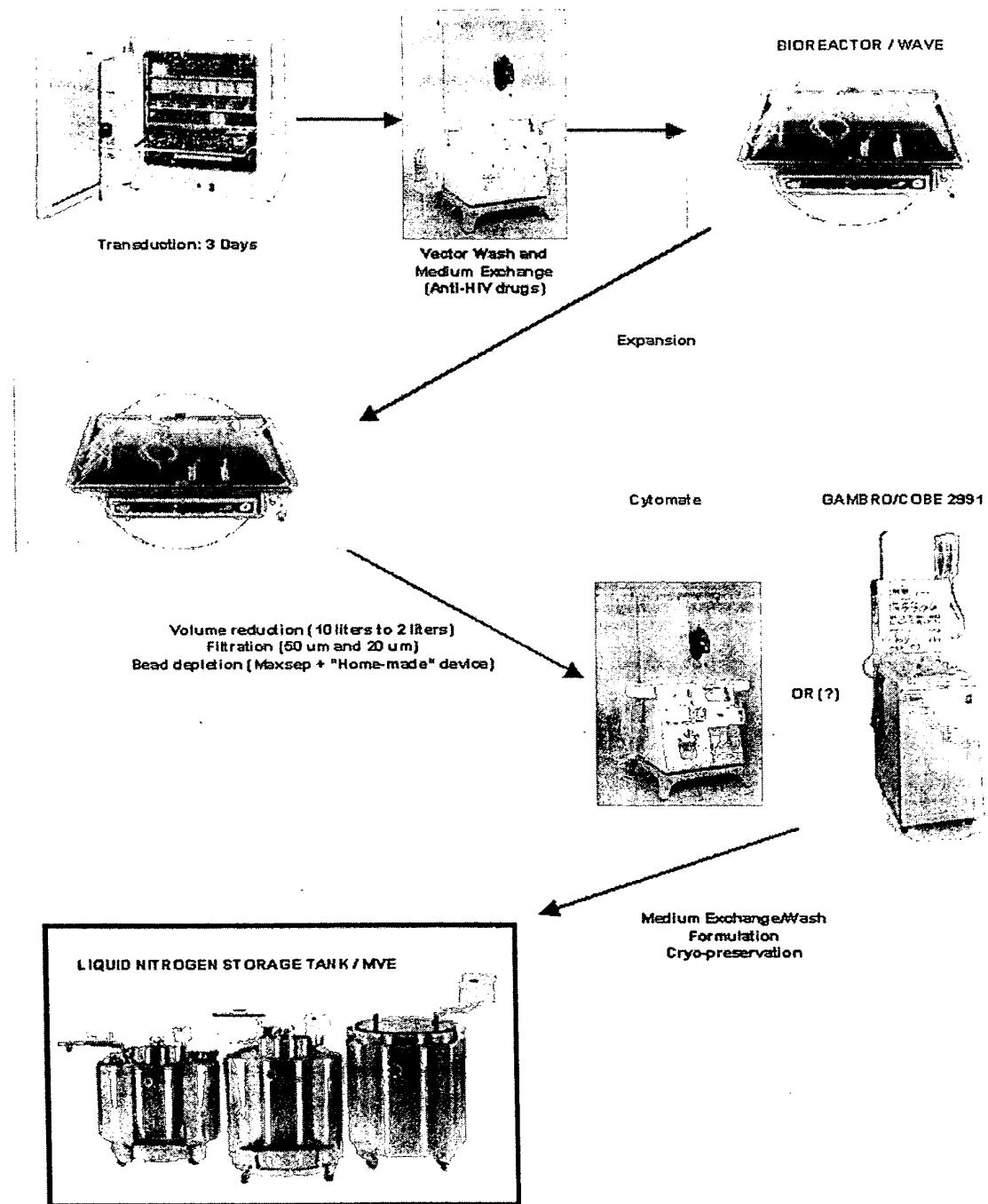


Figure 12

BEST AVAILABLE COPY

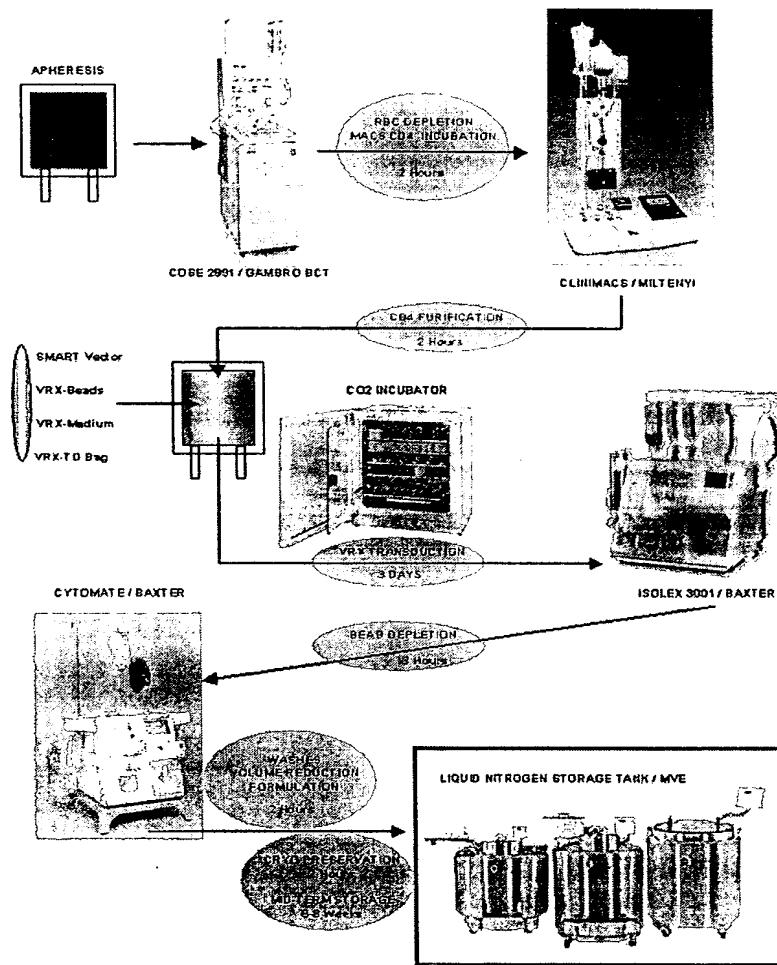


Figure 13

BEST AVAILABLE COPY

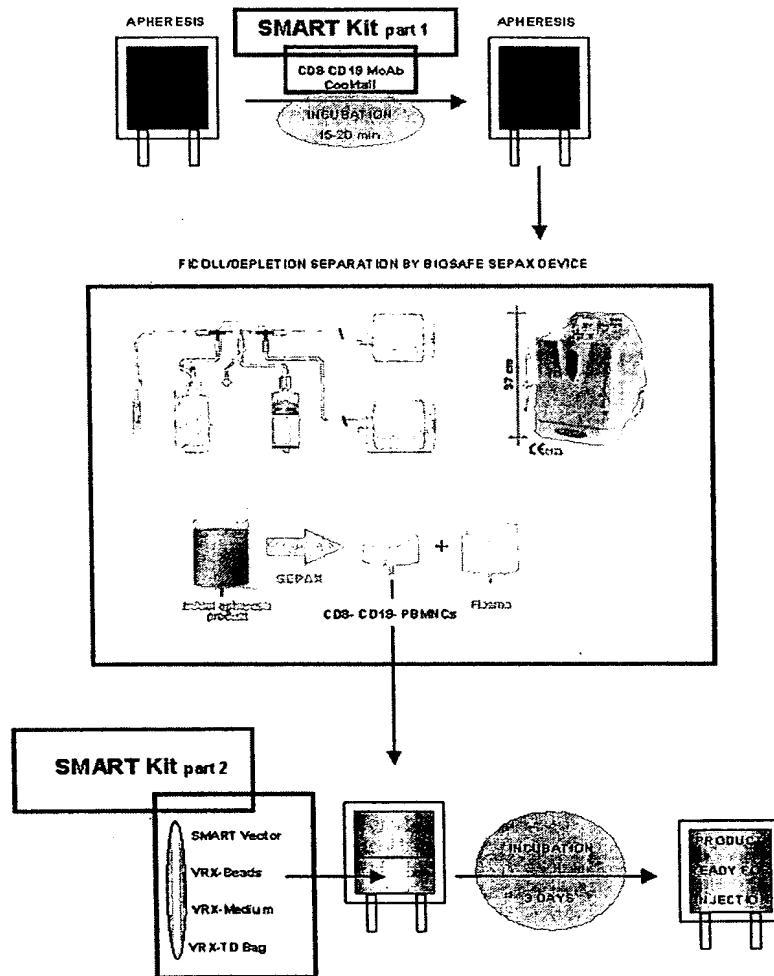


Figure 14

REST AVAILABLE COPIES

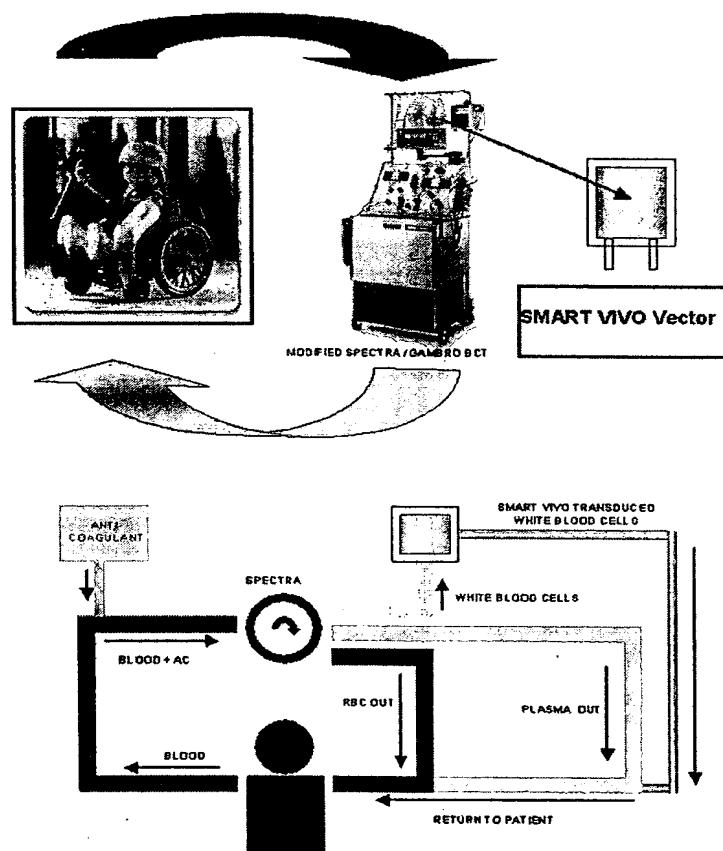


Figure 15

BEST AVAILABLE COPY

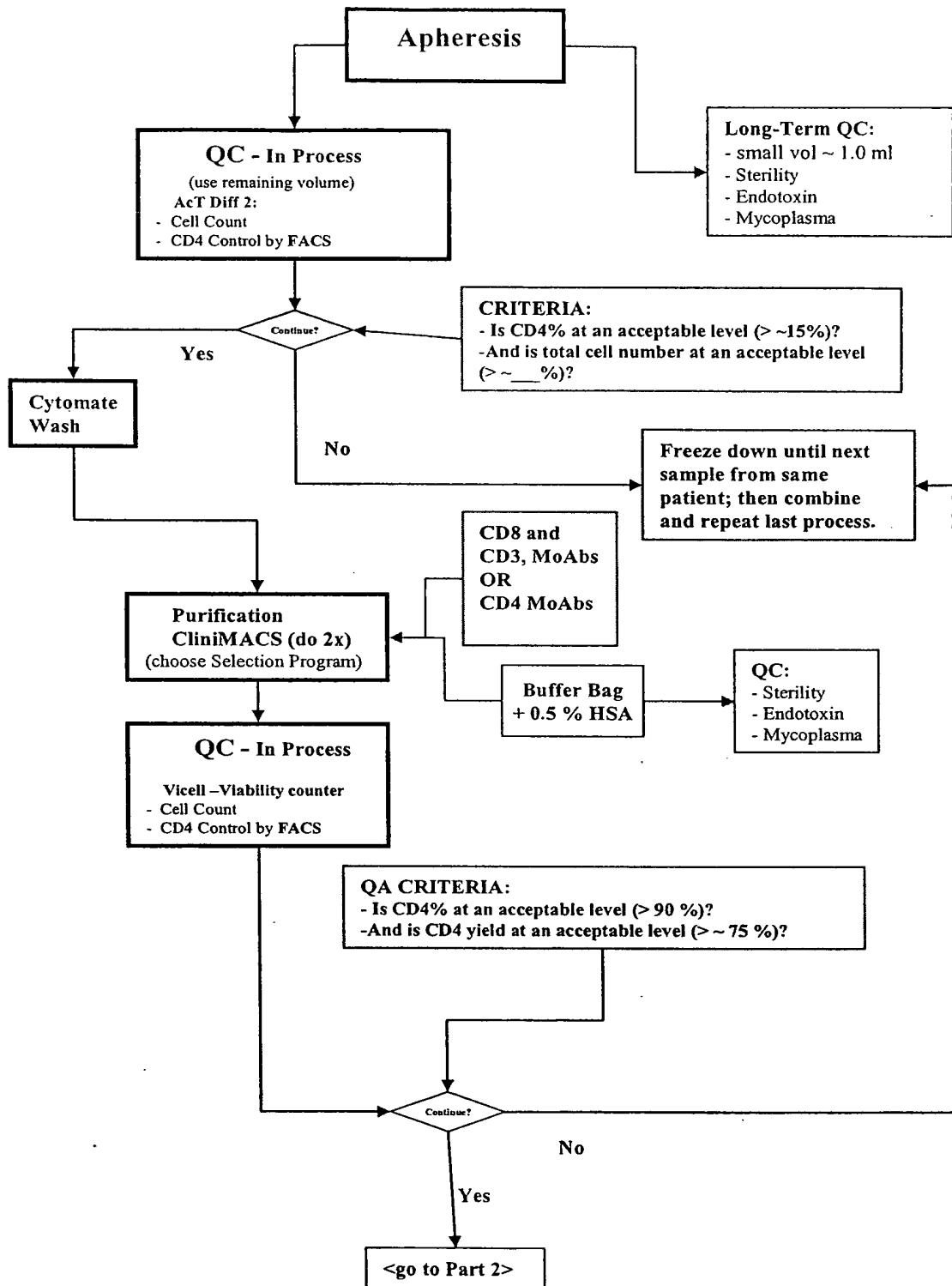


Figure 16A

BEST AVAILABLE COPY

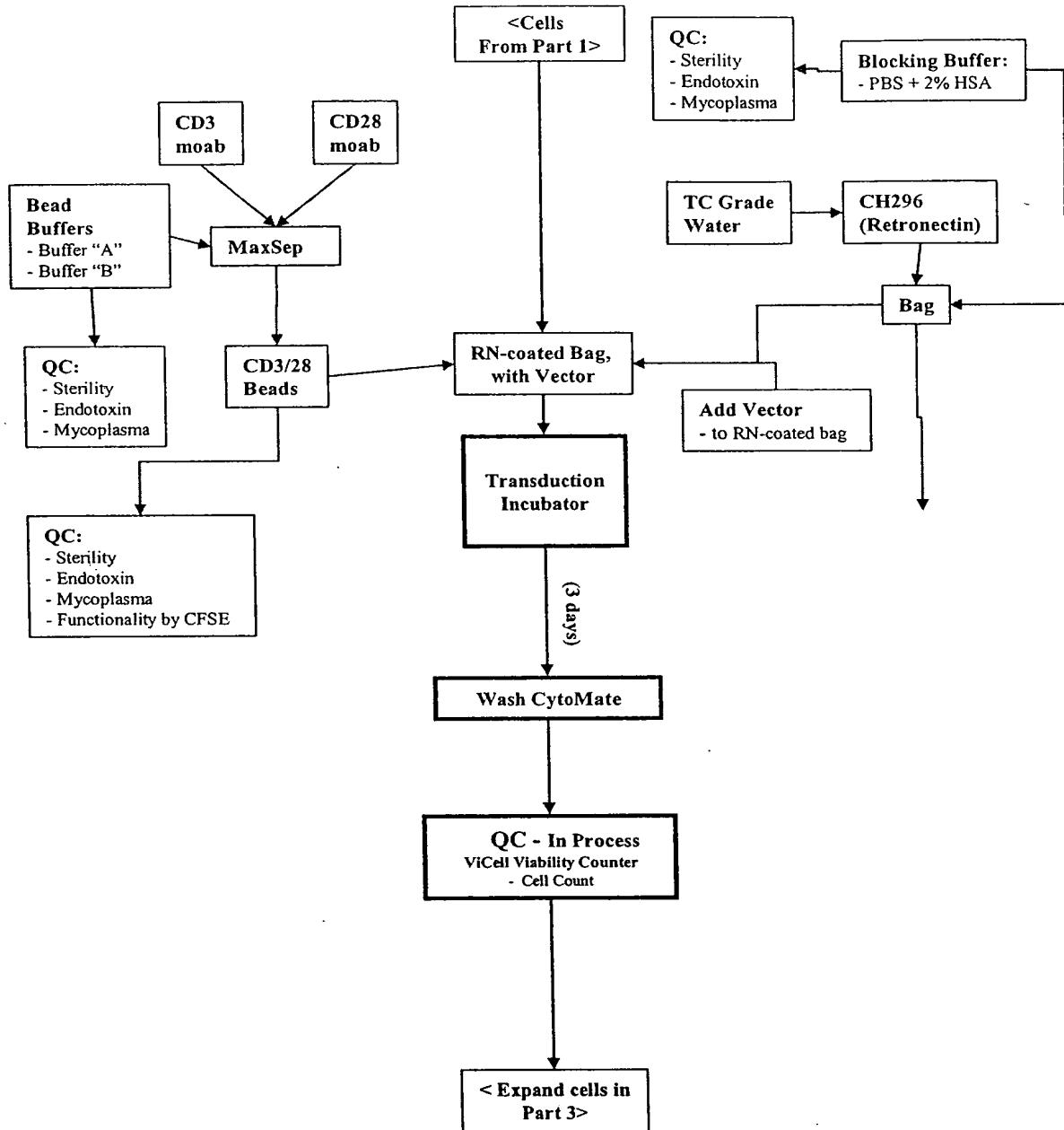


Figure 16B

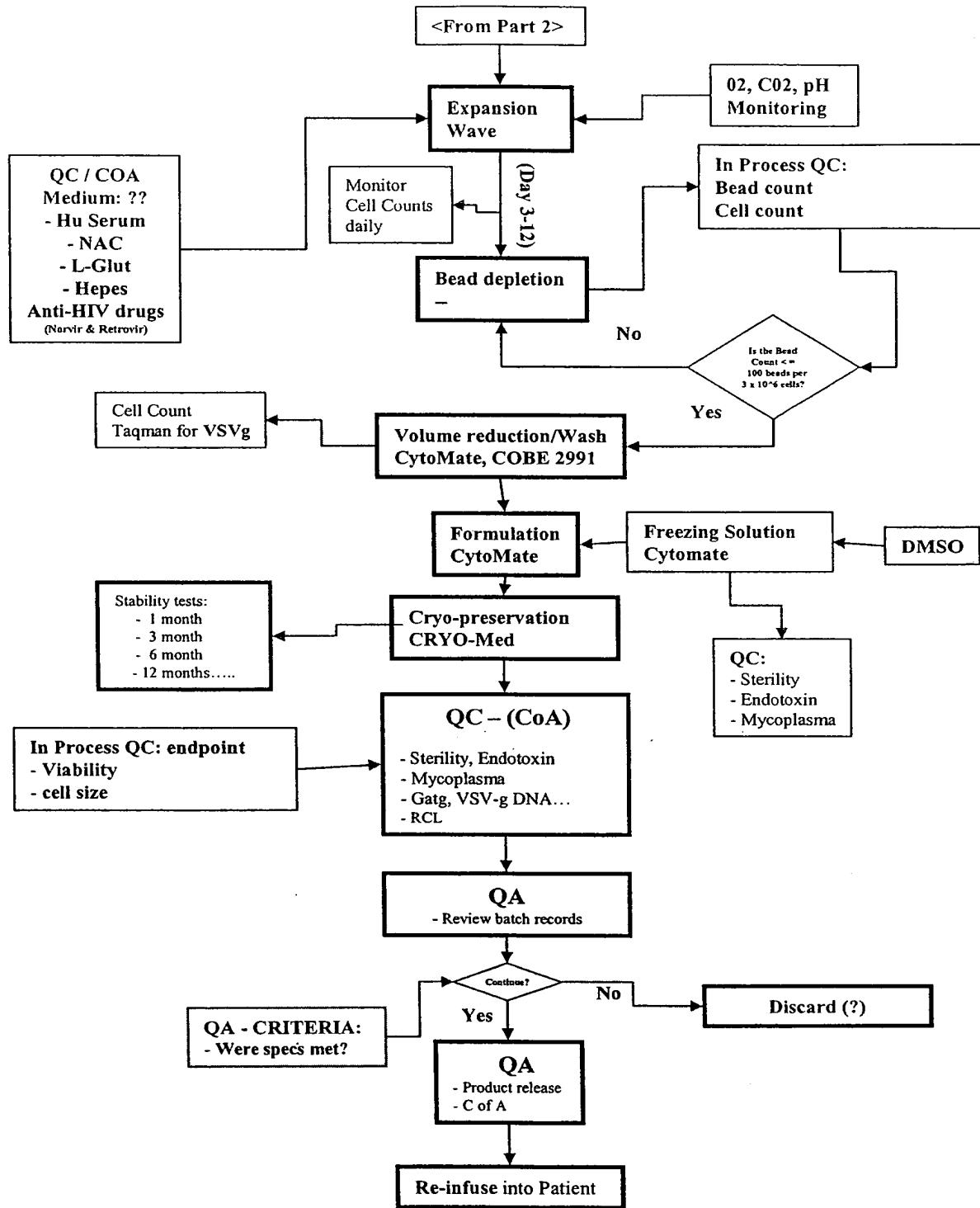


Figure 16C

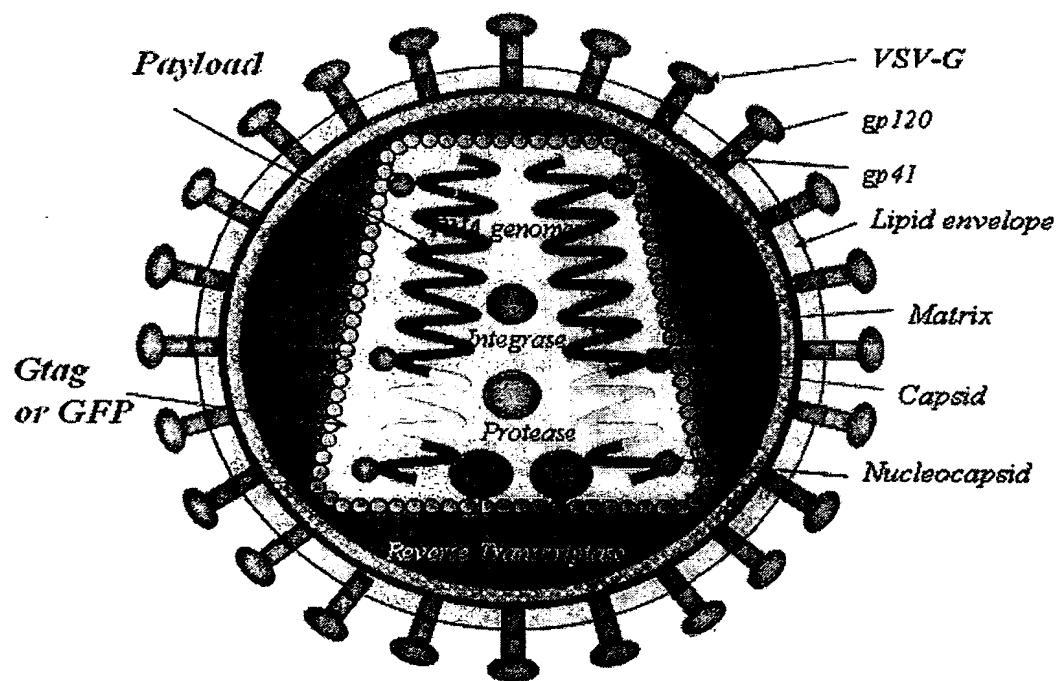


Figure 17

BEST AVAILABLE COPY

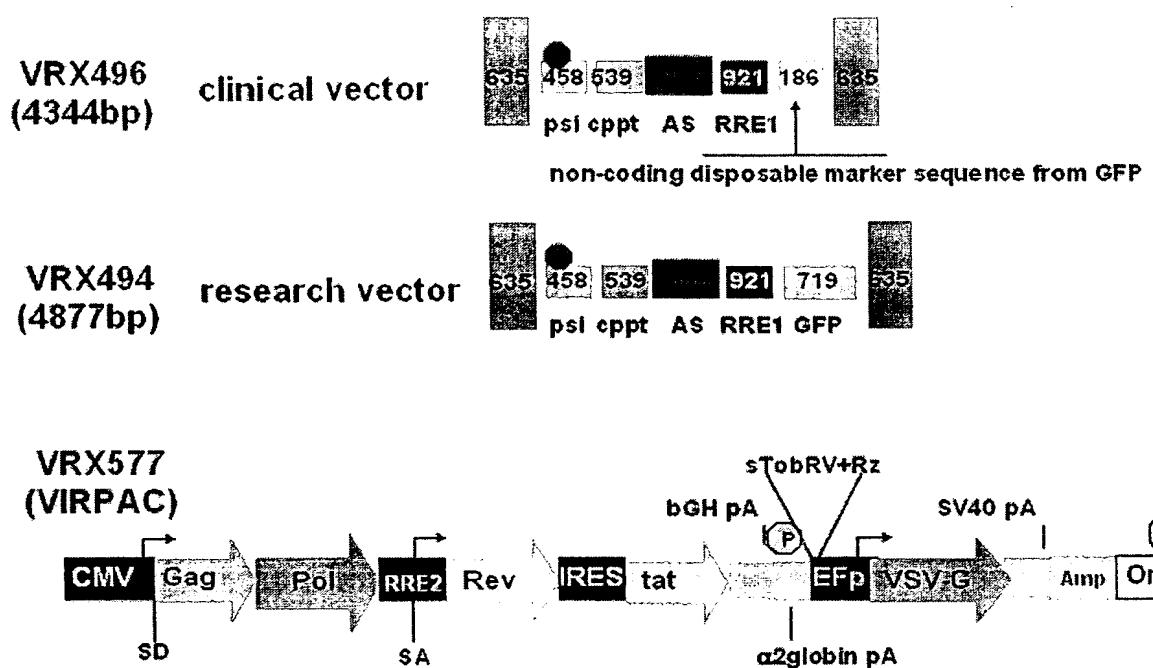


Figure 18

BEST AVAILABLE COPY

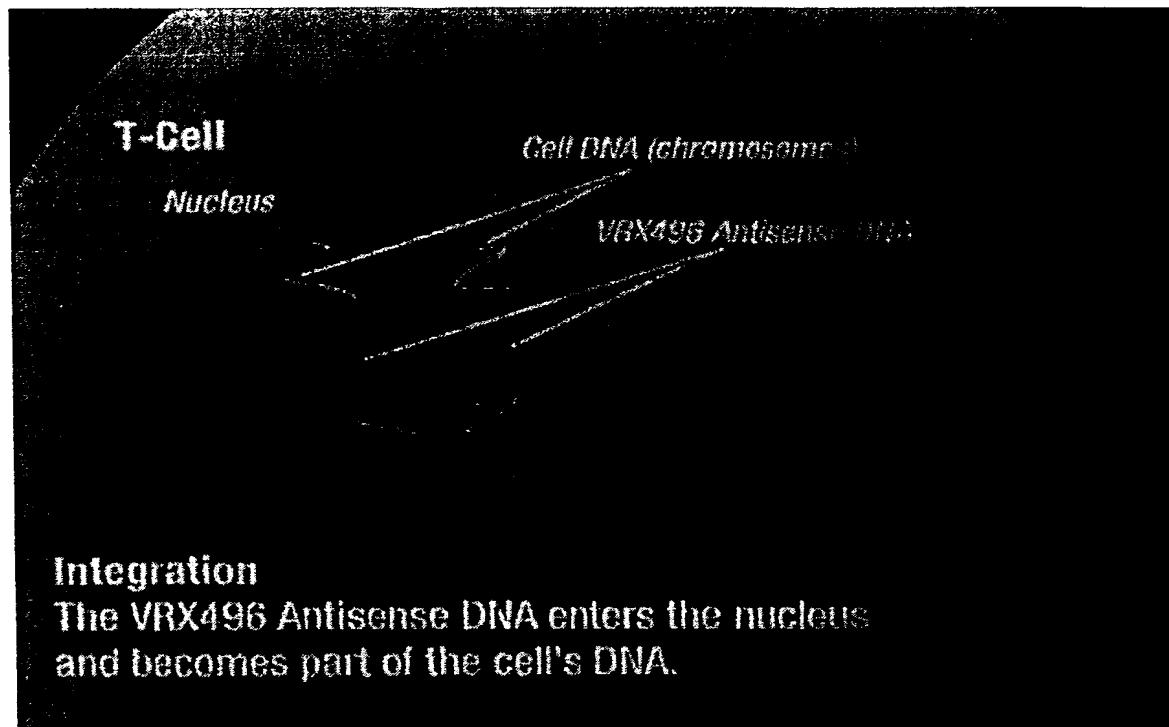


Figure 19

BEST AVAILABLE COPY

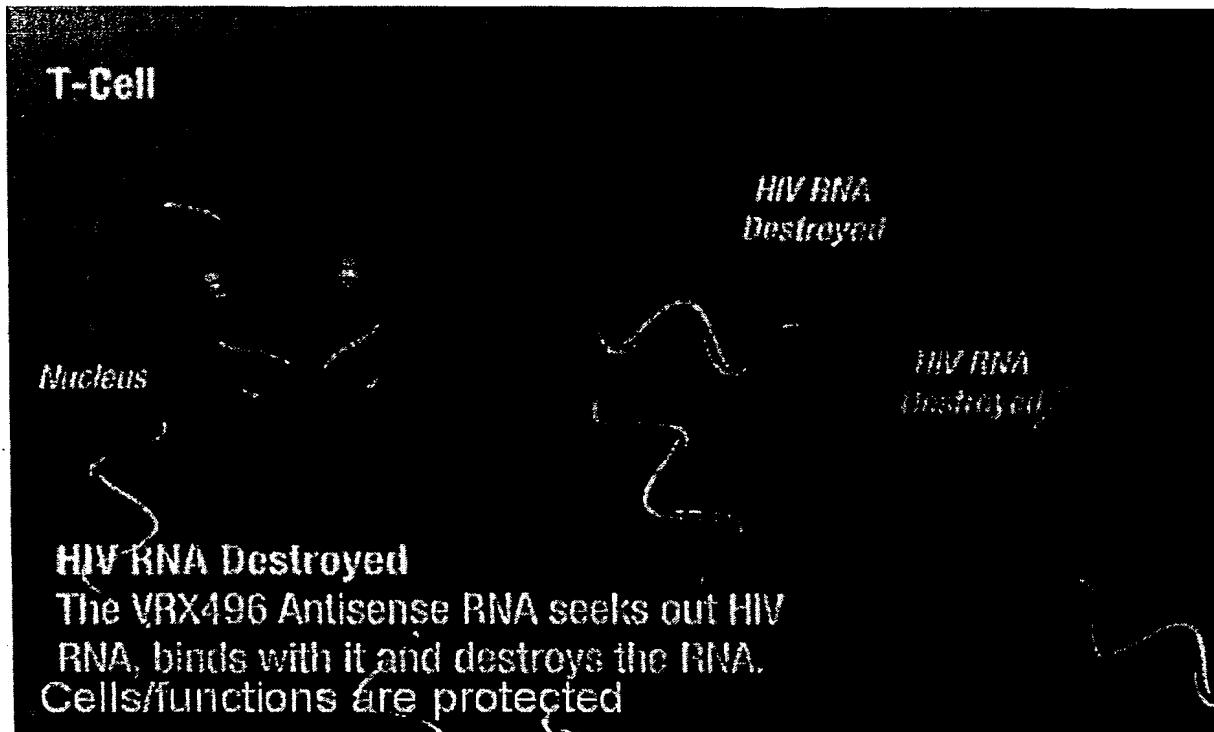


Figure 20

BEST AVAILABLE COPY

	Number of Mutations Needed for Resistance	Ability to Cause Disease
• Anti HIV drugs – 2-8 binding sites	Small	High
• Long antisense RNA – 937 binding sites	Large	Low

HIV either gets destroyed by antisense or it mutates to levels where the virus is not fit to cause disease

Figure 21

BEST AVAILABLE COPY

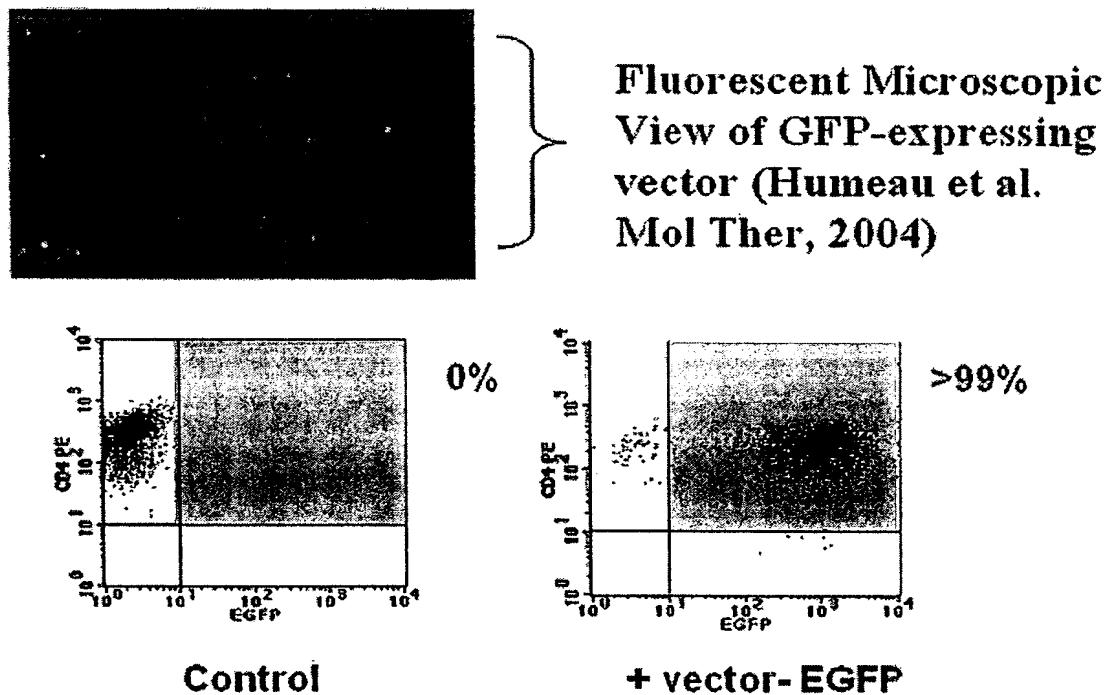


Figure 22

BEST AVAILABLE COPY

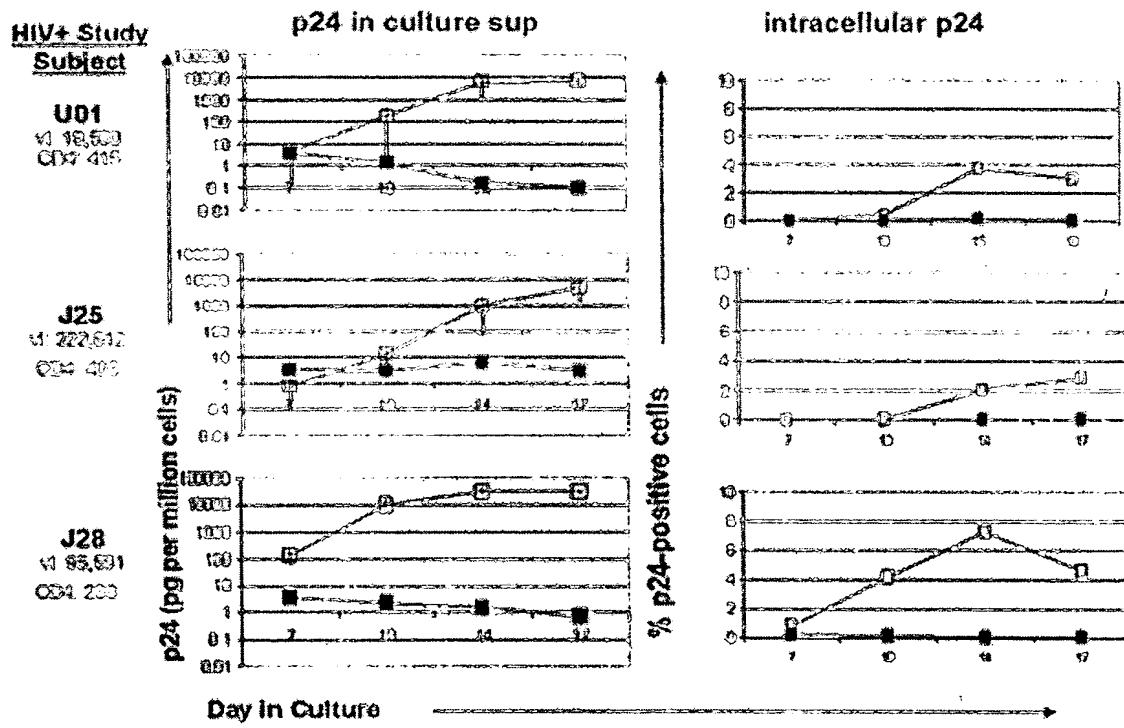


Figure 23

BEST AVAILABLE COPY

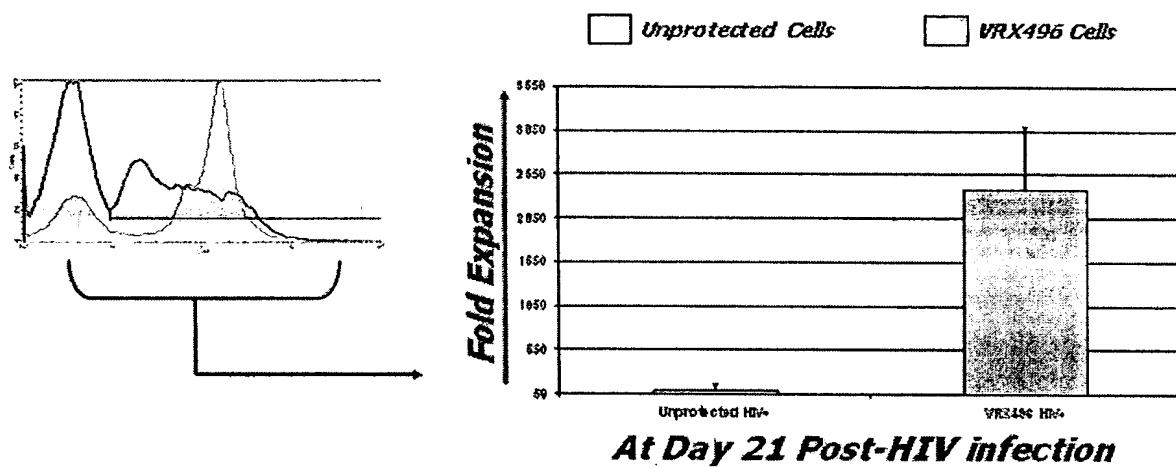


Figure 24

BEST AVAILABLE COPY

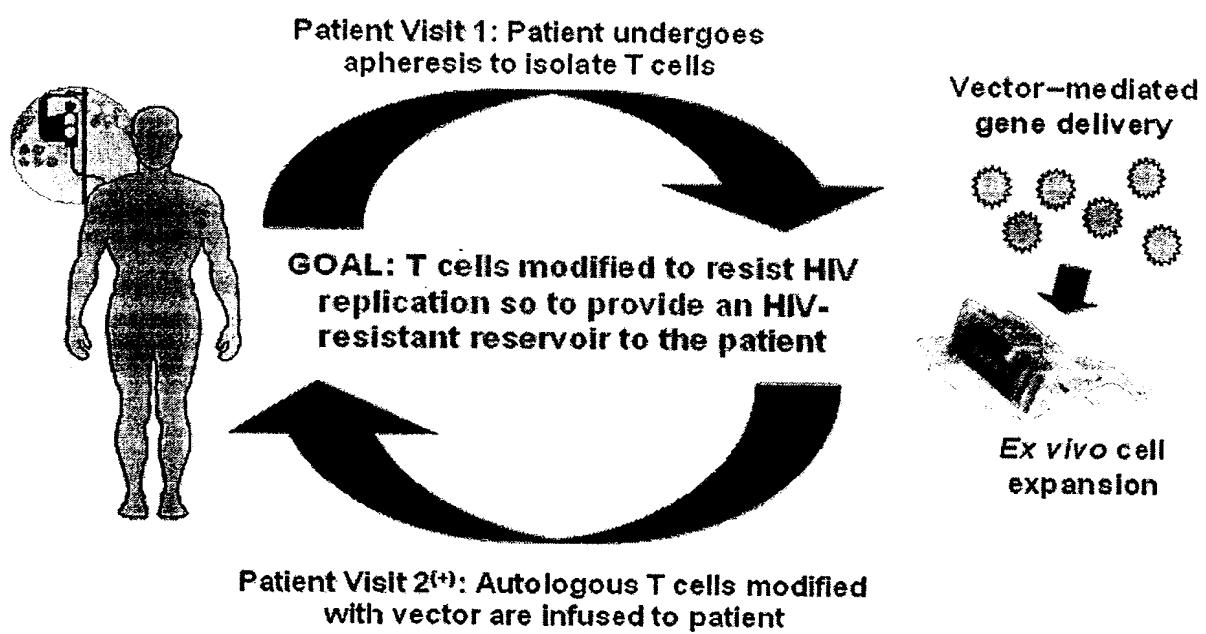


Figure 25

REST AVAILABLE COPY

Table 1. Baseline characteristics of HIV subjects

Characteristics	#1 RB	#2 JFJ	#3 RAG	#4 AJ	#5 JF
Age	41	44	40	27	45
Gender	M	M	M	M	M
Ethnic Group	Caucasian	Caucasian	African American	African American	Caucasian
Mean viral load	188,500	64,100	46,150	54,213	19,972
Mean CD4 counts	228	316	241	308	220
HIV Infection (Yrs)	15	15	15	10	9
Discontinued Therapy	6 NRTI + 2 NNRTI + 5 PI	5 NRTI + 4 PI	6 NRTI + 1 PI	4 NRTI + 2 NNRTI + 1 PI	4 NRTI + 1 NNRTI + 1 PI
Current Therapy	2 NRTI + 2 PI	3 NRTI + 1 NNRTI + 1 PI	None	2 NRTI + 1 NRTI	2 NRTI + 1 PI

Figure 26

BEST AVAILABLE COPY

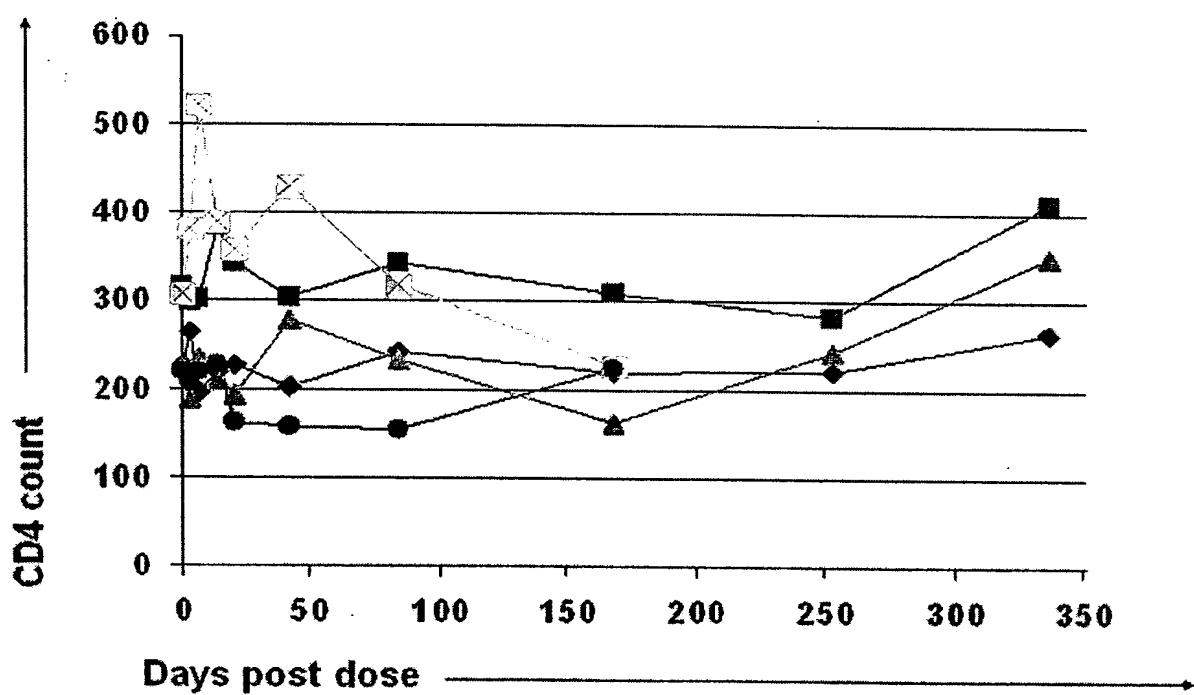


Figure 27

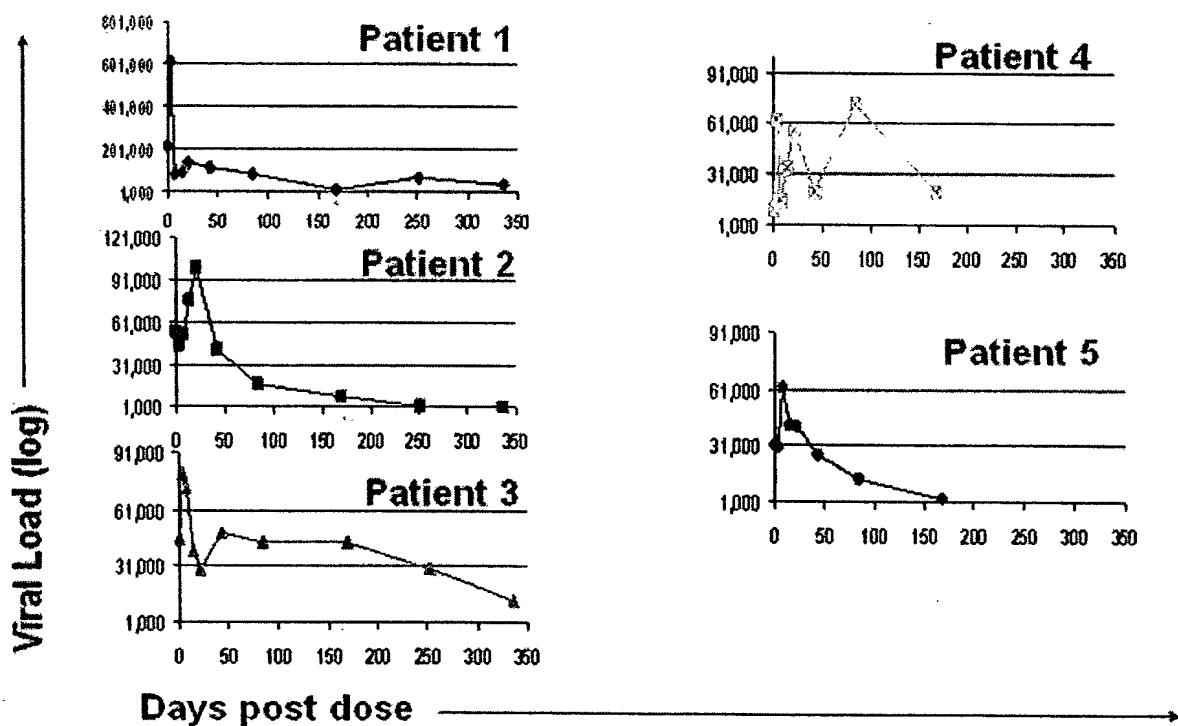


Figure 28

BEST AVAILABLE COPY

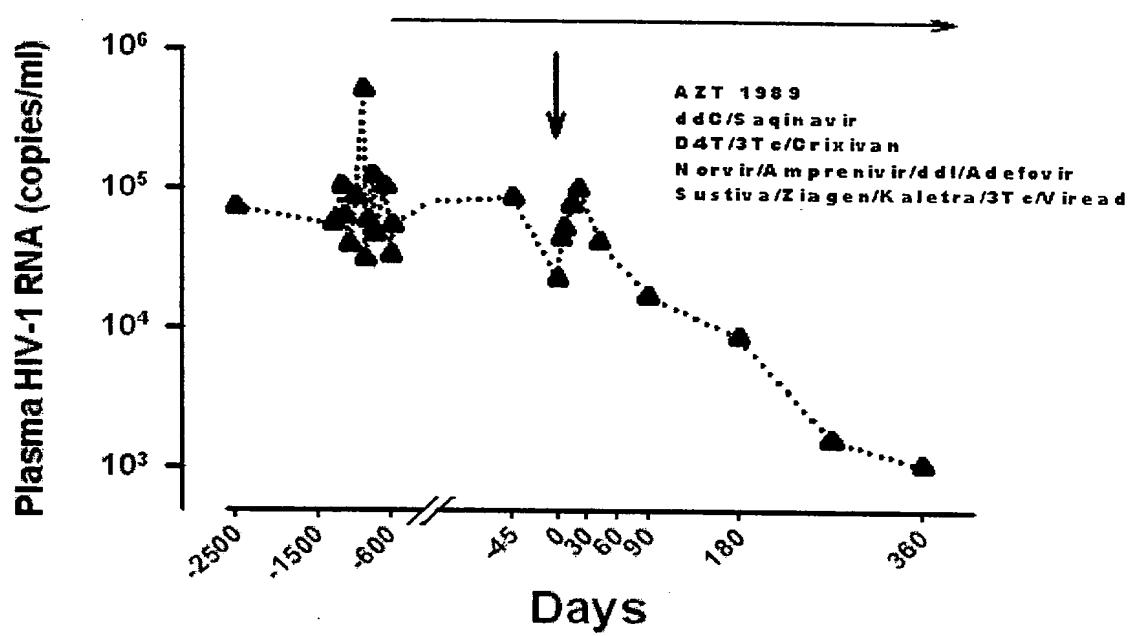


Figure 29

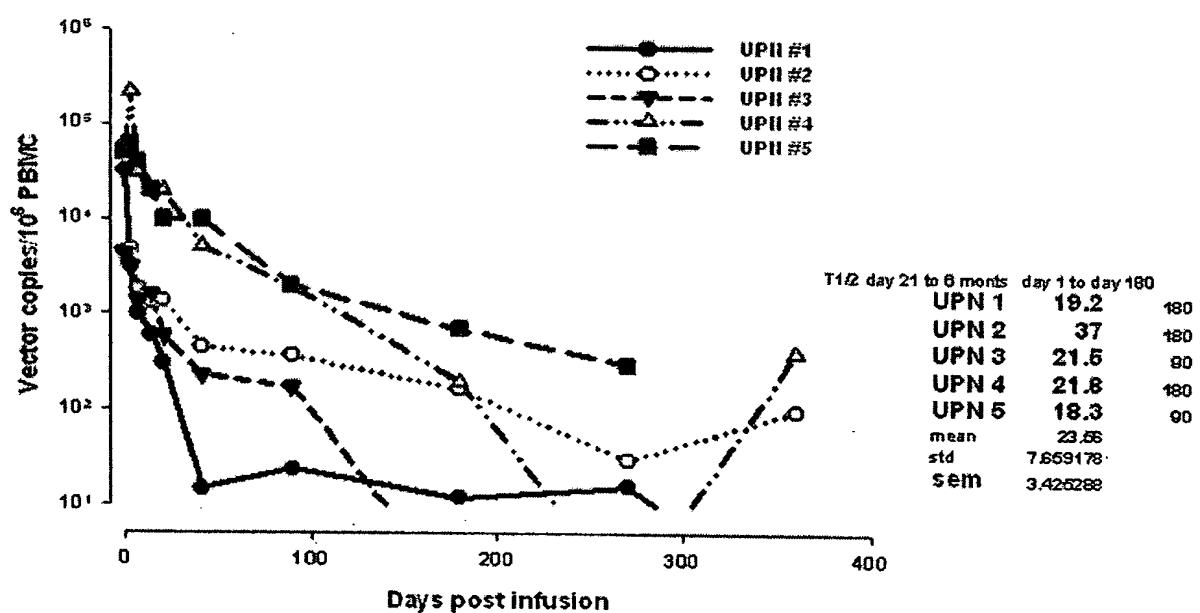


Figure 30

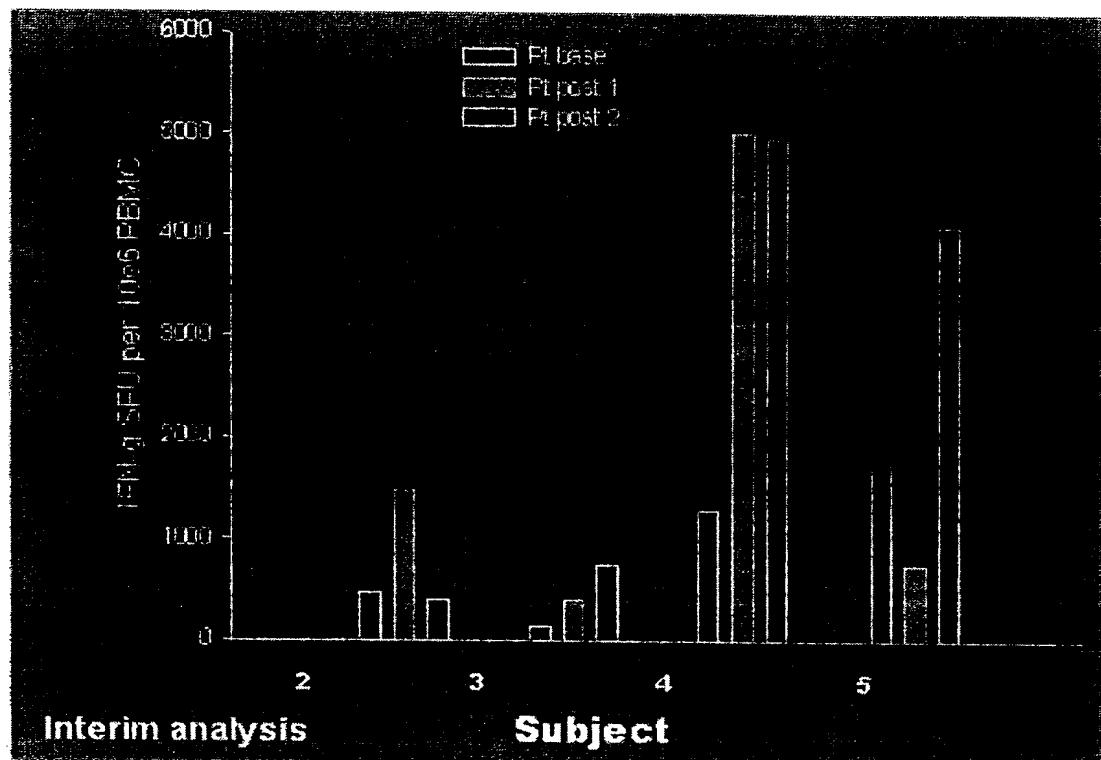


Figure 31

BEST AVAILABLE COPY

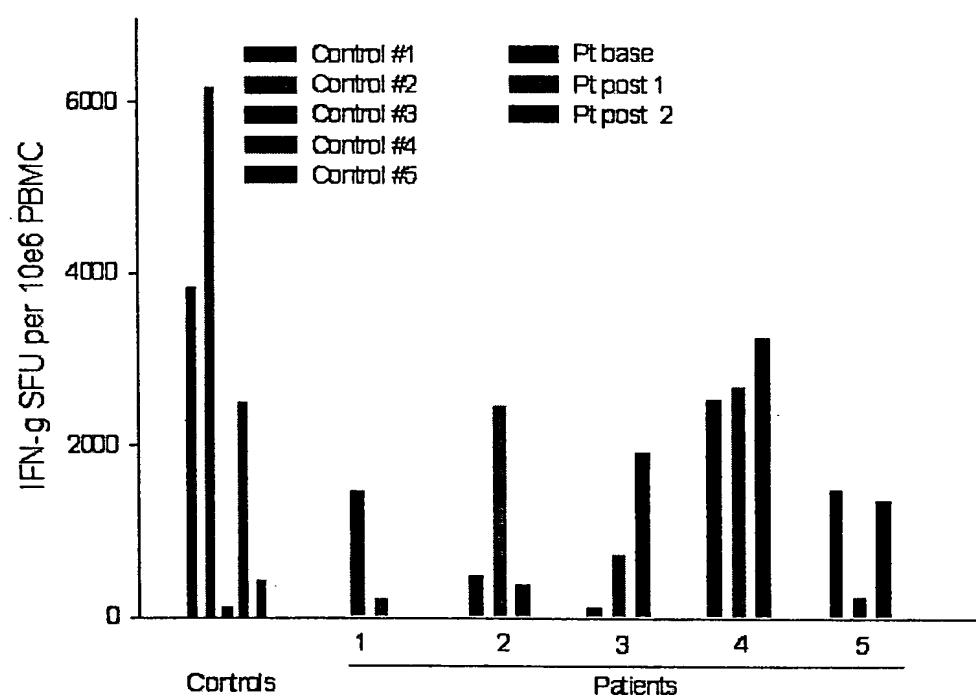


Figure 32

BEST AVAILABLE COPY

Parameter	Phase I Production	Phase II Production
Media	with 10% FBS	with 5% FBS
Transfection	individual cell factory per bag	8 cell factories per bag
Nunc Cell Factories	16	32
Harvest Collections	2	3
Harvest Volume	~35 L	~ 105L
Collections Mode	Individual NCF	8 NCF per bag
Clarification Filters	2 ft ²	5 ft ²
Concentration	~40 fold	~ 100 fold
Chromatography	4 separate 1L columns	2 serially connected 5L columns
Final volume	~1.2 L	~ 2.5 L

Figure 33

REST AVAILABLE COPY

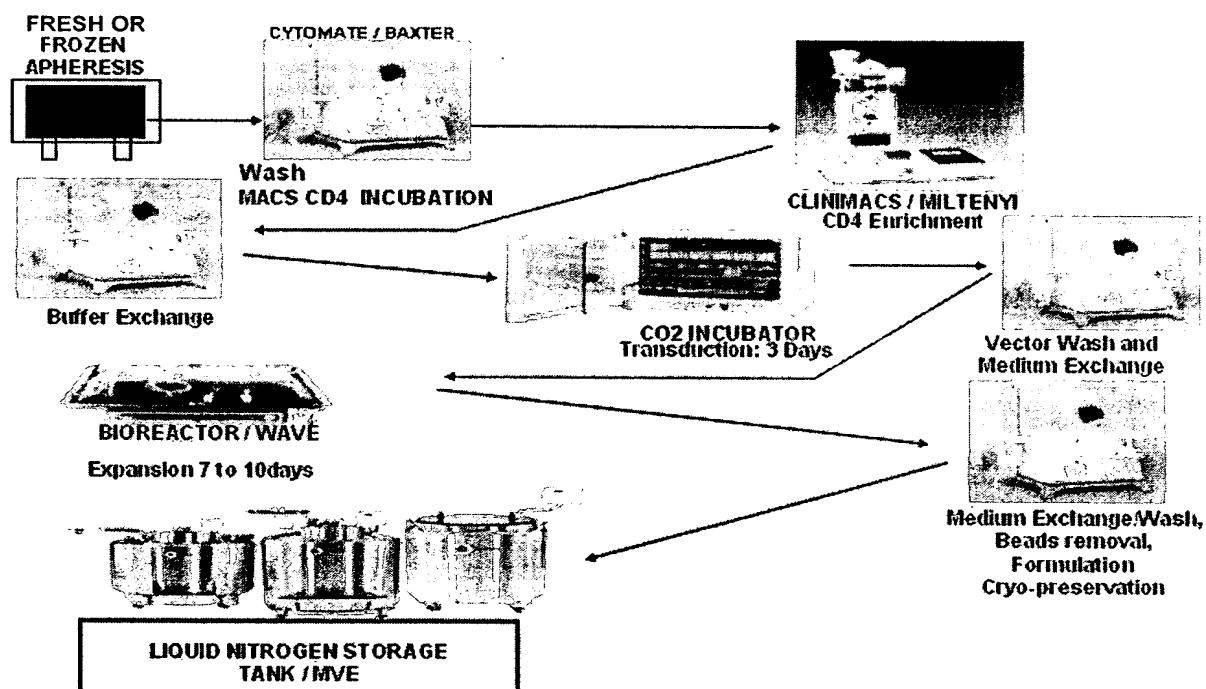


Figure 34

REST AVAILABLE COPY

UPenn Phase 1 Cell Product	VIRxSYS Phase 2 Development Lots
CD4+ Cells: 56%, Abs. 3.06×10^8 (52 % recovery)	CD4+ purity: 97.62%, Abs. 3.42×10^9 (47.7% recovery)
CD4+ Cells: 52.2%, Abs. 4.38×10^8 (48% recovery)	CD4+ purity: 97.4%, Abs. 1.48×10^9 (40.5% recovery)
CD4+ Cells: 23%, Abs. 1.67×10^8 (26% recovery)	CD4+ purity: 91.77%, Abs. 2.05×10^9 (48.8% recovery)
CD4+ Cells: 33.4%, Abs. 2.93×10^8 (30% recovery)	
CD4+ Cells: 19.5 %, Abs. 1.77×10^8 (23% recovery)	
Average CD4+ purity: 36.82% (range 19.5-56%)	Average CD4+ purity: 95.6% (recovery 91.77-97.62%)

Figure 35

BEST AVAILABLE COPY

Phase I Cell Product		Phase II Development Lots	
Subject Study ID	Vector copy number per cell	Process Run #	Vector copy number per cell
001-022 J-K	1.20	1	2.80
001-017 A-J	4.10	2	1.19
001-010 RAG	0.98	3	1.48
001-001 JFJ	1.80		
001-002 R-B	2.3		
Average	2.08		1.82

Figure 36

BEST AVAILABLE COPY

Phase I Cell Product		Phase II Development Lots	
Subject Study ID	Total Cells / Fold Expansion	Process Run #	Total Cells / Fold Expansion
001-022 J-K	15.8x10 ⁹ / 65	1	52.3x10 ⁹ / 28.6
001-017 A-J	20.6x10 ⁹ / 40	2	104x10 ⁹ / 58.8
001-010 RAG	6.8x10 ⁹ / 25	3	96.6x10 ⁹ / 63
001-001 JFJ	11.5x10 ⁹ / 32	4	87.5x10 ⁹ / 63.2
001-002 R-B	15.2x10 ⁹ / 66		
Average	14x10⁹ / 45.6		85.1x10⁹ / 53.4

Figure 37

BEST AVAILABLE COPY